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Isoforms of Serratia marcescens nuclease. Comparative analysis of the substrate specificity

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Abstract

Comparative analysis of the specificity of Serratia marcescens nuclease isoforms has been carried out. Mononucleotides separated by anion-exchange chromatography with presence of 7 M urea from partially hydrolyzed RNA were identified by reversed-phase HPLC. Both enzymes were found to split phosphodiester bonds at nearly all bases in the nucleic acid chain. However nuclease Sm1 demonstrated a preferred cleavage of phosphodiester bonds near uracil and nuclease Sm2 - near guanine. A possible role of N-terminal tripeptide fragment in nucleases mechanism is discussed.